PowerVu™
Digital Video Compression Systems
Leading the Way with Digital Television for the 21st Century

Scientific Atlanta

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Experience Counts. When you need someone to guide you into the digital future, experience counts.

With more than 20 years of experience in the satellite television industry, Scientific-Atlanta understands television distribution and the issues you face. Our satellite receivers, exciters, earth stations, and B-MAC encryption systems provide satellite broadcasts in more than 135 countries around the world.

As the world moves toward a digital future, Scientific-Atlanta is ready. In fact, we have played an active role in developing and implementing digital video compression standards that meet your needs, and we are in our fourth year of supplying MPEG-based (Moving Pictures Experts Group) digital television systems to customers around the world.

This powerful combination of our analog heritage, coupled with our cutting edge digital technology, has enabled us to serve major customers around the world. These customers include innovators like Grupo Medcom-TeleRed, Orbit, the European Broadcast Union, General Motors, Korea Telecom, Turner Broadcasting, and many others.

Scientific-Atlanta's PowerVu family of video compression products offers the complete range of capabilities, equipment, and support needed by programmers, broadcasters, specialty networks, and direct-to-home television providers. Experience *does* count, so when you're ready for digital video compression, choose Scientific-Atlanta's PowerVu system.

End-to-End Solution. Scientific-Atlanta is the only company capable of providing both analog and digital video systems, as well as the TV RF equipment needed to transmit and receive video anywhere in the world. Our end-to-end solution includes:

- PowerVu Command Centre
  - Network Management
  - Security
  - Subscriber Management
- PowerVu Digital Uplink Products
  - Video/Audio Encoders
  - Packet Multiplexers
  - Telco Interfaces
  - QPSK Modulators
- PowerVu Digital Downlink Products
  - Commercial Satellite Receivers
  - Headend Satellite Receivers
  - Business Satellite Receivers
  - Home Satellite Receivers
- Turnkey Satellite Earth Stations
- Worldwide Customer Service
  - Installation
  - Maintenance
  - Training

MPEG 2 and DVB. Scientific-Atlanta's commitment to MPEG 2 and DVB standards has resulted in PowerVu systems that provide interoperable, versatile tools for use in the global marketplace. PowerVu's open architecture ensures future compatibility between hardware and software systems.

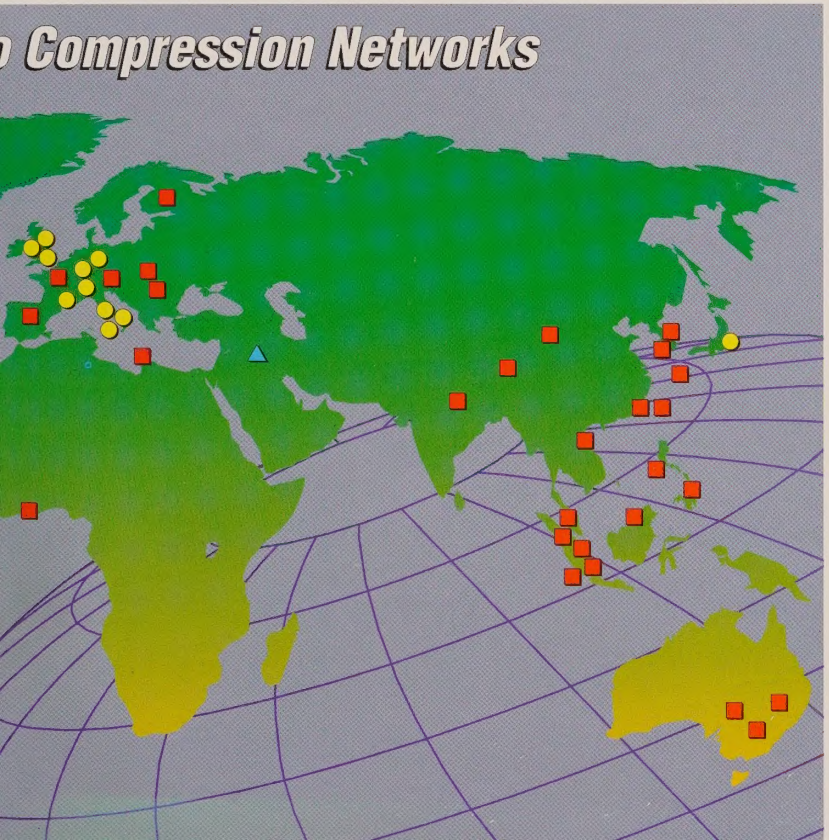
Additionally, the PowerVu Command Centre ensures the secure distribution of selected programming by protecting transmissions from unauthorized use. Combined with support for multiple video formats, PowerVu video compression systems are ideally suited for a variety of applications around the world.

Program Delivery. Whether the goal is to reduce costs or to provide additional programming, programmers and broadcasters alike will benefit from PowerVu digital video systems. Predictable signal quality assures that each customer receives the same high-quality broadcast. The ability to send multiple, digitally compressed channels in a single satellite transponder reduces costs and allows programmers to economically add new revenue-generating services. The capability to process either analog or digital input

signals in the PowerVu encoder allows the continued use of analog studio equipment during the migration to a complete digital network.

Specialty Networks. Continuing in the tradition of our B-MAC analog encryption product line, the PowerVu system provides secure digital networks for the specialized needs of a variety of businesses. These include such diverse applications as sports program delivery, automobile dealer training, medical information exchange, and internal corporate news and information updates.

Direct-to-Home. The PowerVu system is ideally suited for delivery of video, audio, data, pay-per-view, impulse pay-per-view, electronic program guides, subtitling, and personal messaging services directly to the home. Proven subscriber entitlement and scrambling provided by the PowerVu system ensure that only authorized digital satellite receivers can unscramble and receive these revenue-generating services.



DIGITAL DIALOGUE

"Our new Direct-to-Home network operations center will be one of the largest in Latin America. PowerVu digital compression technology will offer our customers outstanding video quality and a wide variety of exciting technologies including an advanced electronic viewing guide and impulse pay-per-view. And, we can increase programming in the future to include ten transponders providing over 100 television channels without having to expand our network operations center."

Alejandro Serna, Chairman of the Executive Committee, Grupo Medcom-TeleRed/Mexico

"One of the major factors that gave us early entry into digital signal distribution by satellite was the selection of Scientific-Atlanta's digital technology. We had a high degree of confidence in their ability to deliver an end-to-end system. In addition to their experience, we also were impressed with the short amount of time from contract signing to the first installation of the system. In only a few months, using Scientific-Atlanta's receivers, we were able to equip more than 2600 small cable operations all over Canada with digital technology. These operators supply television to under-served communities, many with fewer than 500 households. Our Scientific-Atlanta digital network lets us bring big city advantages to these remote areas."

John Underhill, Vice President of Network Operations, Cancom/Canada

"PowerVu digital video compression is a cost-effective way for us to distribute news feeds, current affairs reports, and other programs. Compression lets us increase the number of programs transmitted on the same amount of bandwidth."

Ray Reynolds, National Manager of Technical Operations, ABC Television/Australia

"The PowerVu equipment will allow us to save money on our syndication efforts while maintaining the video quality we deliver to our affiliates. Since digital compression lowers the number of satellite transponders we require, we're exploring the potential revenue we can generate by selling our excess capacity. We also like the flexibility we now have with the PowerVu system to support our future digital transportability as we grow internationally."

Randy Seiler, Senior Vice President of Engineering and Technical Services, The Family Channel/ UnitedStates

"In 1991, PanAmSat became the first international satellite service provider to offer compressed digital video services, and since that time, we have remained at the forefront of digital broadcasting technology. This decision to use the latest Scientific-Atlanta system reflects PanAmSat's continuing commitment to offer high-quality, cost-effective services for our broadcast customers around the world."

Robert Bednarek, Senior Vice President of Engineering and Operations, PanAmSat/Worldwide

"PowerVu digital video compression will allow us to customize our programming to offer the best possible entertainment for our viewers, as well as provide unique marketing opportunities for our advertisers."

Dr. Kevin-john McIntyre, Senior Vice President and General Manager, Discovery Channel/Asia

"Scientific-Atlanta's B-MAC analog transmission and signal protection system has served us well for the last 12 years, but two years ago we started looking at how we could, in the same transponder space, deliver more than one television signal and four radio signals we were sending out over B-MAC. We feel we got more out of the B-MAC system than any other Scientific-Atlanta customer. And now, we're asking the PowerVu system to deliver even more. In fact, we're probably pushing it more than most people do."

Melvin Russell, Director, AFRTS/Worldwide

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PowerVu Command Centre
(Model PCC 1000 through 4000)
- Provides network management, security, and subscriber management capabilities
- Controls uplink parameters, redundancy, program initiation, channel mapping, and subscriber authorization
- Builds on Scientific-Atlanta's years of B-MAC experience for conditional access and encryption

PowerVu Digital Video Encoder
(Model D9110)
- Provides one video and up to four audio channels per chassis
- Supports multiple video formats and resolutions to maximize network flexibility
- Simplifies addition of incremental channels through modular design

PowerVu Digital Multiplexer
(Model D9130)
- Combines up to 12 individual MPEG 2 transport streams
- Encrypts each individual service
- Outputs an MPEG 2 transport stream to the modulator

PowerVu Telco Interface Unit
(Model D9220)
- Converts from Scientific-Atlanta's SWIF (Single Wire Interface) fiber optic lines to telco high-speed coax lines and vice versa
- Supports either E3 or DS3 formats
- Provides either uni- or bi-directional operation

PowerVu Digital Video Modulator
(Model D9380)
- Supports single- or multiple-channel per carrier operation (SCPC/MCPC)
- Provides variable bandwidths and selectable Forward Error Correction (FEC)

PowerVu Commercial Satellite Receiver
(Model D9223)
- Meets the requirements of broadcasters and cable programmers
- Provides variable bandwidths and selectable FEC for either SCPC or MCPC reception
- Outputs either PAL or NTSC video
- Delivers two standard and two optional tunable stereo audio channels
- Provides an optional high-speed data channel (for concurrent transmission with video)

PowerVu Headend Satellite Receiver
(Model D9225)
- Meets the need for economical headend applications
- Outputs one video and one stereo audio channel
- Provides variable bandwidths and selectable FEC for either SCPC or MCPC reception

PowerVu Business Satellite Receiver
(Model D9234)
- Addresses the business needs of private television users worldwide
- Enables the transition from analog to digital services
- Provides variable bandwidths and selectable FEC for either SCPC or MCPC reception
- Processes PAL and NTSC video formats

PowerVu Home Satellite Receiver
(Model D9233)
- Delivers expanded programming to the home
- Provides one video and one stereo audio output
- Includes a convenient remote control unit for program displays, on-screen menus, VCR recording, and more

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